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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,037	05/30/2001	Hirokazu Yano	2204-010851	6743

7590

11/05/2003

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EXAMINER

AHMED, SHEEBA

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/870,037

Applicant(s)

YANO ET AL.

Examiner

Sheeba Ahmed

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-- The MAILING DATE of this communicati n appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 22, 2003 has been entered.

Response to Amendment

2. Amendments to claims 1, 6, 8, 13, and 19 have been entered in the above-identified application. **Claims 1-20 are pending.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4-10, 15, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urata et al. (US 6,015,628) in view of Sasaki et al. (US 5,716,255).

Urata et al. disclose an organic composite coated steel sheet (***corresponding to the painted metal sheet of claim 8***) (Column1, lines 8-10) comprising a rolled steel

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sheet base (***corresponding to the base metal sheet of claim 8***), a zinc or zinc-alloy plated layer (***corresponding to Zn coating of claim 9***), a chromate layer formed on the zinc or zinc alloy plated layer (***corresponding to the surface chemically treated with chromic acid as recited in claim 10***), and an organic film formed on the chromate layer. The organic film (***corresponding to the paint composition of the claimed invention***) comprises an epoxy resin (***corresponding to the base resin of the claimed invention and thus meeting the limitations of claims 2 and 15***) and a rust preventive additive (Column 9, lines 1-68 and Column 10, lines 46-63). The amount of the rust preventive additive is 3 to 50% by weight (***thus meeting the limitations of claims 4 and 17***) and examples include silica and aluminum dihydrogen tripolyphosphate (***corresponding to polyphosphate of the claimed invention and meeting the limitations of claims 5 and 18***) (Column 21, lines 20-40). Corrosion-inhibiting activity may be further improved by using ion-exchanged hydrophilic silica wherein the cation is calcium ion (***corresponding to Ca ion-exchanged porous silica claimed invention***) (Column 22, lines 23-35).

Urata et al. do not disclose that the organic film may comprise both the ion-exchanged silica and the aluminum dihydrogen tripolyphosphate.

However, Sasaki et al. disclose a sealing material which has better durability and comprises an aluminum phosphate and a silica wherein the amount of the silica is 15 to 50% by weight with the balance being the aluminum phosphate.

Accordingly, it would have been obvious to one having ordinary skill in the art to use both the ion-exchanged silica and the aluminum dihydrogen tripolyphosphate in the

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organic film disclosed by Urata et al. wherein the amount of the ion-exchanged silica is 15 to 50% by weight and the balance is aluminum dihydrogen tripolyphosphate given that Sasaki et al. teach that the combination of the silica and the aluminum phosphate in the claimed ratio provides better durability.

4. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urata et al. (US 6,015,628) in view of Sasaki et al. (US 5,716,255) and Nagashima et al. (US 6,180,177 B1).

Urata et al. and Sasaki et al., as discussed above, do not disclose that the base metal sheet has been treated with a fluoroacid such that fluorides are deposited on the surface of the base metal sheet as recited in claims 11-13.

However, Nagashima et al. disclose a surface treatment agents for metallic materials which can impart corrosion resistance and provides improved paint adherence to the metallic materials (Column 1, lines 10-15 and Column 8, lines 2-41). The surface treatment agent comprises fluoroacids which contain four or more fluorine atoms and one or more elements selected from the group consisting of titanium, zirconium, silicon, hafnium, aluminum and boron (Column 2, lines 50-60).

Accordingly, it would have been obvious to one having ordinary skill in the art to treat the base metal sheet disclosed by Urata et al. with a surface treatment agent comprising a fluoroacid which contains four or more fluorine atoms and one or more elements selected from the group consisting of titanium, zirconium, silicon, hafnium, aluminum and boron given that Nagashima et al. specifically teach that doing so can

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impart corrosion resistance and provides improved paint adherence to metallic materials. Furthermore, the Examiner takes the position that a surface treated with the surface treatment agent disclosed by Nagashima et al. would necessarily provide the deposited surface with fluorides in the claimed amount given that the chemical composition of the surface treatment agent and the manner of application as disclosed by Nagashima et al. and that of the claimed invention are identical.

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Urata et al. (US 6,015,628) in view of Sasaki et al. (US 5,716,255) and Tanaka (US 5,623,003).

Urata et al. and Sasaki et al., as discussed above, do not disclose that the organic film layer may be coated with a topcoat.

However, Tanaka discloses a coating composition for metal substrates that provides corrosion resistance and comprises a polyester resin or an epoxy-modified polyester resin (Column 1, lines 10-15 and column 2, lines 12-15) and an anti-corrosion pigment such as aluminum dihydrogen tripolyphosphate (Column 6, lines 10-30) and which may be applied to a zinc-plated steel sheet (Column 6, lines 45-55) and may be further coated with a topcoating composition to further improve the corrosion resistance and appearance (Column 7, lines 1-7).

Accordingly, it would have been obvious to one having ordinary skill in the art to add a top coat to the organic film disclosed by Urata et al. given that Tanaka teaches that addend a topcoating layer further improves corrosion resistance and appearance.

Response to Arguments

6. Applicant's arguments filed on August 22, 2003 (Paper No. 12) have been fully considered but they are not persuasive. Applicants traverse the rejection of claims 1, 2, 4-10, 15, and 17-20 under 35 U.S.C. 103(a) as being unpatentable over Urata et al. (US 6,015,628) in view of Sasaki et al. (US 5,716,255) and submit that the present invention is chromium-free and achieves corrosion resistance without the use of a chromate layer intermediate to a metal sheet and an organic resin layer. First, the Examiner would like to point out that the claims of the present invention have been amended to recite a paint composition or a painted metal sheet wherein ***the corrosion inhibitor particles are chromium free***. The amended claims do not recite a painted metal sheet that excludes a chromate layer. Second, claim 10 specifically recites a base metal sheet that has been chemically treated with chromic acid and the Examiner presents this as further evidence that the present invention does not exclude a chromate layer.

Applicants traverse the Examiner's position that the silica ion exchanged with calcium is taught by Urata as a preferred corrosion inhibitor in the base resin of the paint composition. The Applicants assert that silica combined with sparingly soluble chromates are the preferred corrosion inhibitor. In response, the Examiner would again like to direct the Applicants attention to Column 22, lines 23-35 which specifically states that the "corrosion-inhibiting activity may be further improved by using ion-exchanged hydrophilic silica wherein the cation is calcium ion".

Applicants further assert that Urata teaches away from the combination of the Ca-bonded silica particles and the aluminum dihydrogen tripolyphosphate because

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Column 21, lines 38-40 state that the most preferred rust preventive additive is silica and chromate. Again, the Examiner disagrees with the Applicants interpretation of the Urata reference. The Examiner takes the position that Urata **does not teach away** from the combination of the Ca-bonded silica particles and the aluminum dihydrogen triphosphosphate. First, the proposed modification or combination does not change the principle of operation of Urata's invention and therefore the teachings of Urata and Sasaki are sufficient to render the claims *prima facie* obvious. Second, Urata falls far short of the kind of teaching that would discourage one of skill in the art from combining the Ca-bonded silica particles with the aluminum dihydrogen triphosphosphate particularly given that Urata discloses both the Ca-bonded silica particles and the aluminum dihydrogen triphosphosphate as preferred rust preventive additives.

Furthermore, Applicants further assert that the Sasaki patent only teaches the combination of colloidal silica with aluminum polyphosphate and not that of Ca-bonded silica particles and polyphosphate, as required by the instant claims. In response, the Examiner would like to point out that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, Sasaki et al. teach that the combination of the silica and the aluminum phosphate in the claimed ratio provides better durability corrosion inhibition.


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Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (703)305-0594. The examiner can normally be reached on Mondays and Thursdays from 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703)308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-5408 for regular communications and (703)305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5665.


Sheeba Ahmed
October 30, 2003